

## Message Text

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ACTION ERDA-07

INFO OCT-01 EUR-12 ISO-00 ERDE-00 ACDA-10 CIAE-00 INR-07

IO-13 L-03 NSAE-00 NSC-05 EB-08 NRC-07 OES-06 FEAE-00

DODE-00 COME-00 /079 W

-----091644Z 110904 /44

R 091430Z FEB 77

FM AMEMBASSY STOCKHOLM

TO SECSTATE WASHDC 9753

UNCLAS STOCKHOLM 601

DEPARTMENT FOR ERDA: JACK VANDERRYN

DEPARTMENT FOR NRC: JOSEPH LA FLEUR

E.O. 11652: N/A

TAGS: TECH, SW

SUBJECT: NUCLEAR WASTE HANDLING TECHNOLOGY

REF: (A) STOCKHOLM A-8, (B) STOCKHOLM A-1, (C) 76 STOCKHOLM A-277

1. THE SWEDISH COMPANY, ASEA, ANNOUNCED TODAY THAT ITS LABORATORY AT ROBERTSFORS NEAR UMEA HAD DEVELOPED TECHNIQUES FOR THE ENCAPSULATION AND STORAGE OF RADIOACTIVE WASTE. THE ASEA METHOD, FOR WHICH PATENT APPLICATIONS HAVE BEEN MADE, MAY PROCEED IN ONE OF THREE WAYS: (A) RADIO-ACTIVE WASTES (THE SO-CALLED CALCINED WASTES REMAINING AFTER REPROCESSING) ARE MIXED WITH HIGHLY RESISTANT CERAMIC MATERIALS AND SINTERED AT HIGH PRESSURE (ABOUT 100 MPA). AND TEMPERATURE (ABOUT 1300 DEG C). THE DENSE PRODUCT, FORMED BY THIS PROCESS, MEANS THAT FURTHER CHANGE OR DECOMPOSITION DOES NOT TAKE PLACE. FURTHERMORE, IT CAN BE STORED IN ROCK CHAMBERS IN STABLE GEOLOGICAL FORMATIONS. (B) LIQUID RADIOACTIVE WASTES ABSORBED IN INORGANIC ION EXCHANGERS (TITANIUM OXIDE) CAN BE DRIED AND CONVERTED TO SOLID AND DENSE CERAMIC BLOCKS UNDER HIGH PRESSURE AND TEMPERATURE. THE PRODUCT HAS THE SAME CHARACTERISTICS AS THAT IN A A ABOVE AND CAN BE STORED IN THE SAME WAY. (C) NUCLEAR FUEL RODS ARE UNCLASSIFIED

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PLACED IN A SPECIALLY MADE ALUMINUM OXIDE CONTAINER. EACH FUEL ROD IS INSERTED INTO ITS OWN CAVITY IN THE CONTAINER. AFTER THE RODS ARE LOADED, A THICK LAYER OF ALUMINUM OXIDE IS MOLDED TO THE TOP UNDER HIGH PRESSURE AND TEMPERATURE SO THAT NO SEAMS OR JOINTS ARE FORMED. EACH CONTAINER ALSO RECEIVES A THICK STEEL COAT WHICH GIVES ADDITIONAL STRENGTH IN CASE OF ACCIDENT IN TRANSPORT AND SHIELDS PERSONNEL AGAINST

RADIATION. ACCORDING TO ASEA, THE ENCAPSULATION MATERIAL (TITANIUM OXIDE) IS HARDER THAN CARBORUNDUM. AS IN THE TWO PREVIOUS CASES, THE RESULTING CONTAINERS CAN BE STORED IN DEEP ROCK CHAMBERS IN STABLE GEOLOGICAL FORMATIONS. (SEE REF A AND C FOR ADDITIONAL MATERIAL ON NUCLEAR WASTE HANDLING).

2. COMMENTS: ASEA'S ANNOUNCEMENT HAS AT LEAST THREE PURPOSES:

(A) TO RESPOND TO THE POLITICAL ATTITUDE OF THE NEW GOVERNMENT WHICH HAS INTRODUCED THE SO-CALLED "CONDITIONS BILL" TO PARLIAMENT TO LIMIT NUCLEAR POWER DEVELOPMENT UNTIL HANDLING AND STORAGE OF RADIOACTIVE WASTE CAN BE SOLVED IN A SATISFACTORY WAY. (SEE REF A B).

(B) CALL ATTENTION TO ASEA'S COMMERCIAL CAPABILITY TO SELL (OR LICENSE) THE NUCLEAR WASTE HANDLING TECHNIQUE TO OTHER COUNTRIES.

(C) ASSURE THE SWEDISH PUBLIC THAT THE COMMERCIAL SECTOR IS RESPONSIBLE AND CONCERNED ABOUT RADIOACTIVE WASTE HANDLING. REPORTING OFFICER HAS BEEN IN TOUCH WITH ASEA OFFICIALS AND EMBASSY WILL FORWARD WHATEVER TECHNICAL DETAILS THAT MAY BE AVAILABLE.

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## Message Attributes

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**Channel Indicators:** n/a  
**Current Classification:** UNCLASSIFIED  
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**Reference:** 77 STOCKHOLM A-8, 77 STOCKHOLM A-1, 76 STOCKHOLM A-277  
**Retention:** 0  
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